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Exhibit 300: Capital Asset Summary
Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview & Summary Information

Date Investment First Submitted: 2009-06-30
Date of Last Change to Activities: 2012-02-28
Investment Auto Submission Date: 2012-02-28
Date of Last Investment Detail Update: 2012-02-28
Date of Last Exhibit 300A Update: 2012-02-28
Date of Last Revision: 2012-02-28

Agency: 006 - Department of Commerce   **Bureau:** 48 - National Oceanic and Atmospheric Administration

Investment Part Code: 01

Investment Category: 00 - Agency Investments

1. Name of this Investment: NOAA/NWS/ Next Generation Weather Radar (NEXRAD) Operations and Maintenance (O&M)

2. Unique Investment Identifier (UII): 006-000310300

Section B: Investment Detail

1. Provide a brief summary of the investment, including a brief description of the related benefit to the mission delivery and management support areas, and the primary beneficiary(ies) of the investment. Include an explanation of any dependencies between this investment and other investments.

NEXRAD is the NWS' prime observation system for acquiring information about tornados and severe storms (storms containing damaging winds, hail, turbulence, and lightning). NEXRAD provides information on precipitation leading to flash flood and heavy snow warnings and is a key element in the forecasting of aviation related weather events. The NEXRAD network is composed of 160 operational radars (122 NWS, 12 FAA and 26 USAF) and 6 radars used for training and depot-level support. The radars are located throughout the United States and its territories and in four overseas USAF locations, two in Korea, one in Okinawa and one in the Azores. A tri-agency agreement defines the cost sharing of network O&M costs. The NEXRAD Program Management Committee is the tri-agency decision making body and each agency has one voting member. By tri-agency agreement, the NWS is responsible for providing O&M support including sustaining engineering, software maintenance, information technology security compliance, and system enhancements. The original $818M NEXRAD capital investment was made during the late 1980s/early 1990s. Funds included in this exhibit represent the steady state O&M investment required to sustain network operations. Investments for major system performance enhancements are included in the NEXRAD Product Improvement Exhibit 300. The NEXRAD network is operated and maintained such that the overall network meets the tri-agency requirement of 96% service availability. Many components of the NEXRAD system are prone to technological obsolescence and require continuous technology refresh to ensure

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continued service availability. An aggressive component obsolescence monitoring and sustaining engineering program provides continuous technology refreshment and ensures NEXRAD's high level of performance. In FY10, funding was increased $1.029M to provide recurring O&M support for hardware and software necessary to ingest into NWS operations doppler radar data from 45 FAA Terminal Doppler Weather Radars located at large airports in the continental US and provide critial radar coverage in known NEXRAD coverage gaps. This capability was developed and deployed under the NEXRAD Product Improvement Exhibit 300. In FY11, a NEXRAD was installed in northwest Washington state that will close a large coverage gap for storms approaching the coast. NEXRAD assets for this installation were obtained from the USAF in exchange for long-term maintenance training.

2. How does this investment close in part or in whole any identified performance gap in support of the mission delivery and management support areas? Include an assessment of the program impact if this investment isn't fully funded.

The NWS provides weather, hydrologic and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas for the protection of life and property and the enhancement of the national economy. To that end, the NEXRAD is the key tool forecasters use to sustain the current level of advance warnings of tornadoes, flash floods and winter storms as well as to produce aviation forecasts. The NEXRAD O&M funds in this Exhibit 300 are needed to continue to meet current service availability requirements and to implement proposed less-than-major improvements resulting in extended system useful service life. A separate Exhibit 300, 'Next Generation Radar (NEXRAD) System Planned Product Improvement' (006-48-01-12-01-3102-00-108-023), details major improvements to the NEXRAD's capabilities. The NWS provides the Nation with as complete, accurate, and timely meteorological and hydrological services as possible within existing scientific, technologic, and economic constraints. These services include data collection, data analysis, forecasting, and information dissemination. One of the most important elements of this overall mission is the NWS' responsibility for issuing public warnings and forecasts. The timeliness and accuracy of these warnings and forecasts relies heavily on continuous, reliable, accurate weather radar information.   An important resource for continuously improving the timeliness and accuracy of NWS operational warnings and forecasts is the Warning Decision Training Branch (WDTB). The WDTB develops and delivers training on the integrated elements of the warning process within a NWS forecast office. WDTB instructors develop and deliver a variety of in-residence, teletraining, and on-line asynchronous training content to meet this mission. Its goal is to increase expertise among NWS personnel so that they can better serve the public during warning operations.   The Federal Aviation Administration (FAA) and U.S. Air Force (USAF) also rely on this information for safe, efficient civil and military flight operations. NEXRAD O&M activities are essential to ensuring the continuous flow of radar information to tri-agency users and to sustaining the operation of the Nation's investment in the NEXRAD network.

3. For this investment's technical features, please identify where any specific technical solutions are required by legislation, in response to audit findings, or to meet requirements from other sources. Where 'Yes' is indicated, provide a brief description of the technical features required, and any citations regarding specific mandates for these requirements.

a. **Legislative Mandate:** *
  *
b. **Audit Finding Resolution:** *

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*

c. **Published Agency Strategic Plan:** *
   *

d. **Other Requirement:** *
   *

4. Provide a list of this investment's accomplishments in the prior year (PY), including projects or useful components/project segments completed, new functionality added, or operational efficiency achieved.

1. Inspected 13 and repaired 8 radomes.   2. Deployed RPG Build 12.0. Provided improved quantitative precipitation estimates for flash-flood warnings and water management decisions, and added the Super Resolution version of the Mesocyclone Detection Algorithm to better detect tornadoes.   3. Deployed upgraded Klystron Air Flow Sensors to improve transmitter reliability.
4. Reviewed 62 proposed wind farm installations for potential impacts to NEXRAD operations. Continued to work with Oklahoma University to characterize wind turbine clutter. 5. Obtained renewed authorization to operate the TDWR SPG system. 6. Installed new (Langley Hill) radar to improve radar coverage of storms over western Washington and and approaching from the Pacific Ocean.

5. Provide a list of planned accomplishments for current year (CY) and budget year (BY).
FY12 Planned Accomplishments
1. Inspect 10 radomes and repair 6 radomes to ensure long-term viability and availability of radar systems. 2. Inspect 8 towers and repair 8 towers to ensure long-term viability and availability of radar systems. 3. Deploy Master System Control Function refresh to improve RPG reliability. 4. Deploy SPG KVMs to ensure supportability and reliability of TDWR SPG. 5. Begin to deploy RPG Build 13 software to provide Digital Reflectivity Quality product for FAA s WARP Program. 6. Obtain authorization to continue to operate NEXRAD. 7. Begin to deploy RDA Build 13 software to implement Hybridge Spectrum Width Estimator, restore Clutter Mitigation Decision algorithm functionality, and improve IT security. 8. Begin to deploy RDA Router refresh to ensure supportability and IT security. 9. Deploy TDWR SPG Build 4.0 to ensure supportability and IT security. 10. Raise Melbourne radar tower to mitigate radar beam blockage caused by new aircraft hangar construction. 11. Begin RDA LAN Switch refresh to ensure supportability and IT security.
12. Begin RDA Remote Access Server refresh to ensure supportability and IT security. 13. Begin RDA Power Administrators refresh to ensure supportability and IT security 14. Begin Frame Relay Hub Router Replacement to ensure supportability and IT security 15. Deploy RVP8 Processor Upgrade needed to support Dual Pol modification. FY13 Planned Accomplishments 1. Inspect 10 radomes and repair 8 radomes to sustain the radar network to ensure long-term viability and availability of radar systems. 2. Inspect 8 towers and repair 8 towers to sustain the radar network to ensure long-term viability and availability of radar systems. 3. Complete RDA router refresh deployment. 4. Complete RDA LAN Switch refresh. 6. Complete RDA Remote Access Server refresh. 7. Complete acquisition for Frame Relay Hub Router Replacement. 8. Complete acquisition for RDA Power Administrators.

6. Provide brief descriptions of out year (BY+1, BY+2, BY+3, BY+4 and beyond as necessary) budget requests for this investment. Briefly describe planned projects and/or useful components proposed. Your justification should address new functionality, systems integration, technology refreshes, efficiencies to be realized, and any other

planned enhancements to existing assets/systems performance or agency operations.

a. **BY+1:**
    *

b. **BY+2:**
    *

c. **BY+3:**
    *

d. **BY+4 and beyond:**
    *

7. Provide the date of the Charter establishing the required Integrated Program Team (IPT) for this investment. An IPT must always include, but is not limited to: a qualified fully-dedicated IT program manager, a contract specialist, an information technology specialist, a security specialist and a business process owner before OMB will approve this program investment budget. IT Program Manager, Business Process Owner and Contract Specialist must be Government Employees.

2009-10-01

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Section C: Summary of Funding (Budget Authority for Capital Assets)

1.

Table I.C.1 Summary of Funding									
	PY-1 & Prior	PY 2011	CY 2012	BY 2013	BY+1 2014	BY+2 2015	BY+3 2016	BY+4 & beyond	Total
Planning Costs:	$0.0	$0.0	$0.0	$0.0	*	*	*	*	*
DME (Excluding Planning) Costs:	$0.0	$0.0	$0.0	$0.0	*	*	*	*	*
DME (Including Planning) Govt. FTEs:	$0.0	$0.0	$0.0	$0.0	*	*	*	*	*
Sub-Total DME (Including Govt. FTE):	0	0	0	0	*	*	*	*	*
O & M Costs:	$789.6	$37.6	$36.7	$41.4	*	*	*	*	O *
O & M Govt. FTEs:	$20.0	$10.1	$10.1	$10.1	*	*	*	*	*
Sub-Total O & M Costs (Including Govt. FTE):	$809.6	$47.7	$46.8	$51.5	*	*	*	*	*
Total Cost (Including Govt. FTE):	$809.6	$47.7	$46.8	$51.5	*	*	*	*	*
Total Govt. FTE costs:	$20.0	$10.1	$10.1	$10.1	*	*	*	*	*
# of FTE rep by costs:	174	80	80	80	*	*	*	*	# *

Total change from prior year final President's Budget ($)		$-3.3	$-4.7						$-8.0
Total change from prior year final President's Budget (%)		-6.40%	-9.20%						-15.60%

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2. While some investments are consistent with a defined life cycle model (i.e., an initial period of development followed by a period of primarily operational spending and an identifiable end point), others represent a collection of ongoing activities and operations with no known terminal point. In the following table, identify whether or not this investment uses a defined life cycle model (as defined in OMB Circular A-131) and provide appropriate investment cost information below.

   a. **Is this investment consistent with a life cycle model defined in OMB Circular A-131(i.e., an initial period of development followed by a period of primarily operational spending and an identifiable end point):**
       *

   b. **Describe why the investment is not consistent with life cycle model management defined in OMB Circular A-131, and explain how you adapted your alternatives analysis for this investment?**
       *

       (Where an agency uses a cost model other than the lifecycle cost model, defined by OMB Circular A-131, responses from 2c to 2h below should reflect the alternative concept.)

   c. **Provide information on what cost model this investment is using and how costs are captured for what years:**
       *

   d. **What year did this investment start (use year e.g., PY-1=2010)**
       1988

   e. **What year will this investment end (use year e.g., BY+5=2018)**
       2025

   f. **Estimated Total DME cost (including planning) for the investment life cycle or other cost model (excluding FTE)**
       *

   g. **Estimated Total O & M cost the investment life cycle or other cost model (excluding FTE)**
       *

   h. **Estimated total Govt. FTE Cost for the investment life cycle or other cost model**
       *

3. If the funding levels have changed from the FY 2012 President's Budget request for PY or CY, briefly explain those changes:
The only change has been an increase for Adjustments-to-Base due to inflationary increases for non-labor activities.

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Section D: Acquisition/Contract Strategy (All Capital Assets)

Table I.D.1 Contracts and Acquisition Strategy											
Contract Type	EVM Required	Contracting Agency ID	Procurement Instrument Identifier (PIID)	Indefinite Delivery Vehicle (IDV) Reference ID	IDV Agency ID	Solicitation ID	Ultimate Contract Value ($M)	Type	PBSA ?	Effective Date	Actual or Expected End Date
Awarded	*	4735	GST0710BG0026	GS06F0541Z	4732	*	*	*	*	*	*
Awarded	*	1330	AB133W11CQ0047	AB133W11CQ0047	4730	*	*	*	*	*	*
Awarded	*	4735	GST0709BG0102	CM130105CT0027	4732	*	*	*	*	*	*
Awarded	*	1330	DOC133W07CN0057	RA133W07CN0057	4730	*	*	*	*	*	*
Awarded	*	1330	DOC133W06CN0168	RA133W06CN0168	4730	*	*	*	*	*	*
Awarded	*	1330	DOC133W12CQ0023	RA133W12CQ0023	4730	*	*	*	*	*	*

2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:
Contracts listed above support a steady state program and are not major IT or development contracts. They tend to be fixed price, level-of-effort contracts providing sustaining engineering, IT security, and hardware/software maintenance services in support of NEXRAD operations and maintenance. There are no discrete deliverables upon which to base an earned value baseline.

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Exhibit 300B: Performance Measurement Report

Section A: General Information

Date of Last Change to Activities: 2012-02-28

Section B: Project Execution Data

Table II.B.1 Projects										
Project ID	**Project Name**	**Project Description**	**Project Start Date**	**Project Completion Date**	**Project Lifecycle Cost ($M)**	**PM Name**	**PM Level of Experience**	**PM Phone**	**PM Phone Ext.**	**PM Email**
3103M10001	NEXRAD Software	Provides software engineering support to meet Tri-Agency software requirements. This is for "build and update related" CPCI integration activities, test equipment configuration and loading, informal testing related to Dual Polarization radar product development, Full Load testing, and general activities associated with informal testing and coordination of shorter duration builds.	2010-09-06	2012-10-26	$0.3	*	*	*	*	*
3103M11005	SPG Software	Provides software engineering	2011-08-05	2012-08-01	$0.2	*	*	*	*	*

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Table II.B.1 Projects											
Project ID	Project Name	Project Description	Project Start Date	Project Completion Date	Project Lifecycle Cost ($M)	PM Name	PM Level of Experience	PM Phone	PM Phone Ext.	PM Email
		support to meet SPG requirements which are NWS specific and not shared by the other agencies. This is for "build and update related" CPCI integration activities, test equipment configuration and loading, informal testing related to SPG software maintenance and testing.								
3103M11006	IT Refresh	Provides refresh of IT components to address technology obsolescence and extend the life cycle of the WSR-88D and SPG. Commercial computer equipment supportability issues typically surface after five to seven years of service.	2011-10-20	2012-10-26	$0.0	*	*	*	*	*

Activity Summary										
Roll-up of Information Provided in Lowest Level Child Activities										
Project ID	Name	Start of Earliest Project Activity	End of Final Project Activity	Total Cost of Project Activities ($M)	End Point Schedule Variance (in days)	End Point Schedule Variance (%)	Cost Variance ($M)	Cost Variance (%)	Total Planned Cost ($M)	Count of Activities

Activity Summary

Roll-up of Information Provided in Lowest Level Child Activities

Project ID	Name	Start of Earliest Project Activity	End of Final Project Activity	Total Cost of Project Activities ($M)	End Point Schedule Variance (in days)	End Point Schedule Variance (%)	Cost Variance ($M)	Cost Variance (%)	Total Planned Cost ($M)	Count of Activities
3103M10001	NEXRAD Software	2011-07-08	2012-05-25	$0.3	0	0	$0.0	0.00%	$0.3	5
3103M11005	SPG Software	2011-08-05	2012-08-01	$0.2	0	0	$0.0	0.00%	$0.2	2
3103M11006	IT Refresh	*	*	$0.0	0	0	$0.0	0.00%	$0.0	1

Key Deliverables

Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
3103M10001	RPG Software Build 12.3	Fully supports lower elevation test at Northwest Washington (Langley Hill), makes AVSET operational, and improves IT security.	2011-11-25	2011-11-25		258	0	0.00%
3103M10001	RDA Software Build 11.8	Required to ensure supportability & security posture.	2011-11-25	2011-11-25		258	0	0.00%
3103M11005	SPG Software Build 4.0	SPG Build 4.0 to ensure supportability and IT security posture.	2012-02-01	2012-02-01		230	0	0.00%
3103M10001	RDA Software Build 11.9	Required to ensure supportability & security posture.	2012-05-25	2012-05-25		133	0	0.00%

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Section C: Operational Data

Table II.C.1 Performance Metrics								
Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
Network service availability - The percentage ot time network radars are available for service. Does not include downtime for pre-planned, routine maintnenace.	percentage	Mission and Business Results - Services for Citizens	Over target	96.000000	96.000000	99.000000	96.000000	Monthly
Data access/availability - The percentage of time NEXRAD data is accessible and available to customers in less than 24 hours from NCDC via the internet.	percentage	Customer Results - Timeliness and Responsiveness	Over target	96.000000	96.000000	99.000000	96.000000	Monthly
Repairable backorders - Keep the percentage of repairable parts on backorder less than 1.0%. This is a measure of health of the supply support system and the effectiveness of the technology refresh effort.	percentage	Process and Activities - Cycle Time and Timeliness	Under target	1.000000	1.000000	0.400000	1.000000	Monthly
Radar Product Generator (RPG) central processing unit load - Processor load should be less than 60%. This is a measure of the ability	percentage	Technology - Effectiveness	Under target	60.000000	60.000000	14.000000	60.000000	Semi-Annual

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Table II.C.1 Performance Metrics								
Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
of the RPG to operate under peak load (typically during servere weather events), the capacity to add new functions, and the effectiveness of technology obsolescense and software management.								
Radar Data Acquisition (RDA) central processing unit load - Processor load should be less than 60%. This is a measure of the ability of the RDA to operate under peak load (typically during severe weather events), the capacity to add new functions, and the effectiveness of technology obsolescence and software management.	percentage	Technology - Effectiveness	Under target	60.000000	60.000000	22.000000	60.000000	Semi-Annual

* - indicates data is for internal use.